Can democratic reforms promote political activism? Evidence from the Great Reform Act of 1832

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September 22, 2024

Word count: 10,288

Activists play a key role in the process of democratic transition and consolidation. How is their activism affected by democratic reforms? We study how local activism responded to the changes in representation introduced by Britain's Great Reform Act. This reform removed all parliamentary representation from some areas; other areas gained representation for the first time. We exploit exogenous variation in which areas lost and gained representation and measure activism using the number of petitions each area sent to parliament. We find that petitioning increased in areas that gained representation, partly because of greater civil society mobilization. We also find that petitioning fell in areas that lost representation. This shows that pro-democratic reforms can promote political activism, while anti-democratic reforms can decrease it. In the case of Britain, there could have been positive feedback between activism and reform, making democratization a path-dependent process and the Great Reform Act its critical juncture.

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We would like to thank Andrew Blick, Federica Carugati, Roger Congleton, Emiliano Grossman, Shaun Hargreaves Heap, Colin Jennings, Finn Klebe, Jean Lacroix, Eric Melander, Paul Le Derff, Ruben Ruiz Rufino, Daniel Schiffman and John Wallis for valuable comments. We are grateful for excellent comments received at Barcelona, Birmingham, UCL, EPSA, Silvaplana, SOIE and DULBEA. We thank Lukasz Krebel and Charlotte Ellis for outstanding research assistance.

1 Introduction

Political activism often plays a key role in the process of democratic transition and consolidation.¹ Activists are particularly important during and just after a transition, when they can pressure leaders to introduce more ambitious reforms.² They can also ensure that democracy survives by helping defeat any threats against it.³ While the effect of activism on democratization is well documented, whether democratic reforms can have an effect on activism remains an open question.⁴

Can a democratic reform promote political activism? This question is difficult to answer using data from recent democratic transitions: these have simultaneously introduced a large number of changes and have often led to a new government taking office (Huntington 1991). This makes it difficult to identify the effect of any particular reform on activism.⁵ Furthermore, these transitions have changed institutions uniformly across an entire country, so that researchers have to rely on cross-country variation. This presents a challenge because of the large number of factors that vary at this level of aggregation. In contrast, many of the 19th century western European reforms were gradual, introducing only a few elements of democracy at each step of the process (Congleton 2007, 2011;

¹ We define activism as actions taken by groups or individuals to bring about political, social or economic change.

^{2} See Pinckney (2020) and Pinckney, Butcher, and Braithwaite (2022).

³ For example, see Acemoglu and Robinson (2019), Almond and Verba (1989), Putnam, Leonardi, and Nanetti (1993), and Weingast (1997).

⁴ This question has received relatively little attention in the literature. Some recent exceptions include Degrave, Lopez Peceño, and Rozenas (2023), Finkel, Gehlbach, and Olsen (2015) and Lacroix (2022). For work on the relationship between activism and democratization, see Aidt and Franck (2019), Aidt and Leon (2016), Andrews and Biggs (2015), Beaulieu (2014), Gleditsch, Olar, and Radean (2023), Stephan and Chenoweth (2008), Przeworski (2009), and Hellmeier and Bernhard (2023).

⁵ In empirical terms, there is a compound treatment problem.

North 1990). In many cases, including that of Britain's Great Reform Act, there was also substantial within-country variation in the reforms.

This article examines how the changes in parliamentary representation introduced by Britain's Great Reform Act affected local activism.⁶ This act was the first of the country's 19th century electoral reforms, and is often credited with setting in motion Britain's transition to democracy. Although the franchise dimension of the reform has received considerable attention (e.g., Acemoglu and Robinson 2000; Boix 2015; Lizzeri and Persico 2004; Ansell and Samuels 2015), this only resulted in a small increase in the number of voters (Fresh 2024): from around 176 thousand to approximately 281 thousand.⁷ The more significant change was in parliamentary representation, understood as the right of an area to elect a member of parliament (MP).⁸ At the time, only some areas could elect MPs, and these areas had been chosen back in the Middle Ages.⁹ The Great Reform Act gave representation to heavily populated areas that until then lacked the right to elect MPs; in this sense the reform was pro-democratic. At the same time, constituencies that were underpopulated lost their right to parliamentary representation.

There are good theoretical reasons to expect that changes in representation will affect activism. Political agency theory shows that an elected representative will be responsive to the concerns of his constituents because this will increase his chances of winning re-

⁶ The introduction of representation was a key step in the development of democracy in western Europe (Stasavage 2016).

⁸ Some existing work treats the right to vote and representation as equivalent, but in 1830s Britain the two were distinct: disenfranchised individuals who lived in an area with a parliamentary representative were to some extent represented.

⁹ This system reflected the contemporary understanding of representation: what mattered was that important social groups like merchants and landowners were represented in parliament, not that each specific location had an MP (Salmon 2009).

⁷ At the time, the population of England and Wales was over 13 million.

election (e.g. Besley 2007).¹⁰ This mechanism works even when the franchise is highly restricted, as it was in 19th century Britain, as activism can still be informative about the concerns of those who will vote. In this way the representative is accountable, motivated by his goal of gaining and maintaining the support of his constituents (Truex 2017).¹¹ In turn, the political opportunity structure framework (Gleditsch and Ruggeri 2010; McAdam 1982; Tarrow 1989) suggests that individuals will find it worthwhile to engage in activism when there is a representative they can target: the costs are lower (i.e. individuals know who to target) and the expected benefits are higher (i.e. the presence of a representative makes a positive response more likely). From this it follows that residents of areas with representation should engage in more activism. Conversely, those who live in areas without representation should be less involved.

We measure political activism using the number of petitions sent to parliament by residents of each constituency. Petitions were the main formal channel through which disenfranchised individuals could communicate their views to the government, and were widely used to try to influence policy (Huzzey and Miller 2020; Knights 2009). Unlike voting, the right to submit a petition was open to all citizens, whether enfranchised or not. And so if changes in representation had an effect on political activism, we would expect to see this reflected in the number of petitions sent to parliament.¹² Measuring activism in this way has an additional advantage: all petitions sent to parliament were recorded in the Journals of the House of Commons, and so we have information on the

¹¹ There is evidence that even highly autocratic governments respond to activism, including the writing of petitions (Dimitrov 2014; Hilbig, Lueders, and Riaz 2023; Lueders 2022).

¹² We also look at measures of activism collected from local newspapers by Horn and Tilly (1988). These include demonstrations, peaceful gatherings and riots.

¹⁰ Consistent with this reasoning, Blumenau (2021) finds that British MPs today are more likely to advocate for the cause of an e-petition when it has strong support in their constituencies.

complete universe of petitions that were sent.¹³ This helps us avoid the selection problems associated with the use of event catalogues that collect information from news sources.

We estimate a number of difference-in-differences specifications where the treatment group is made up of either constituencies that gained representation for the first time or constituencies that lost all representation. The control groups are made up of similar constituencies that did not experience these changes. The reformers employed clear thresholds to determine whether an area would gain or lose MPs; these were based on measures of population, number of houses and taxes paid that predated the reform process. These thresholds allow us to allocate constituencies to treatment and control groups in a way that is plausibly exogenous to petitioning.

Our main finding is that representation and petitioning were complements. Constituencies that gained representation increased their petitions by 48% relative to the control group of similar constituencies that already had representation. This average treatment effect is statistically significant and large in magnitude. We also find that constituencies that lost representation sent 26% fewer petitions than similar constituencies that kept some or all representation. This average treatment effect is again large and statistically significant.

We then examine two mechanisms that can help explain the link between representation and petitioning. First, we find that the fall in petitioning following the loss of representation is driven by areas where MPs had been accountable to local voters. In areas where MPs had been under the control of local elites, the loss of representation had no effect on petitioning. This suggests that petitioning was partly motivated by the expectation that the petitions would influence local MPs, which is consistent with the political opportunity structure framework. Second, we find that the increased petitioning in areas that gained representation was partly a result of increased mobilization by civil society. This is consistent with the idea that representation lowered the relative costs of petitioning, benefiting civil society organizations and other groups that relied heavily

¹³ We restrict our attention to petitions sent to the House of Commons.

on petitions. The article concludes by discussing and ruling out other mechanisms that could explain the link between reform and petitioning.

2 Contribution and related literature

2.1 Democratic reform and activism

Our work contributes to a growing empirical literature on how democratic reforms affect protest and activism. Finkel, Gehlbach, and Olsen (2015) show a large increase in disturbances among former serfs following Russia's Emancipation Reform of 1861. These happened because former serfs were disappointment with the reforms and had increased expectations of what could be achieved. Lacroix (2022) shows that the US Voting Rights Act of 1965 contributed to a reduction in political violence. Degrave, Lopez Peceño, and Rozenas (2023) show that areas where a larger fraction of men were enfranchised in 1831 had more local insurgencies after Louis-Napoleon Bonaparte's 1851 coup d'etat. Our work differs in two important respects. First, it focuses on the role of parliamentary representation and investigates the mechanisms through which it affected activism. Second, it focuses on petitions, which were an institutionalized form of activism. Prior work has mostly focused on non-institutionalized actions like rioting and protesting.¹⁴

Our work is related to the large literature on the causes of activism. In particular, we contribute to the political opportunity structure literature (Gleditsch and Ruggeri 2010; McAdam 1982; Tarrow 1989) by showing evidence that the expected response of MPs, as captured by our measure of accountability, had a significant effect on petitioning. We also show that increases in activism were in part driven by the response of civil society, a group that relied heavily on petitioning.

This article is also related to the literature on liberalizing elections (Howard and Roessler 2006), where elections in non-democratic societies can sometimes deliver vic-

¹⁴ In related work, Olar (2024) shows a short-lived increase in turnout following democratization.

tory for the opposition and lead to a transition. More recent work, including Beaulieu (2014) and Pop-Eleches and Robertson (2015), argues that whether elections lead to democratization or democratic erosion depends on contextual factors. Our contribution is to show that these results generalize beyond elections: parliamentary representation could have a similar democratizing effect by increasing activism.

Finally, our results suggest that a partial democratic reform may be enough to set in motion a path-dependent process of democratization, with an initial reform promoting the activism that leads to further reforms in the future. This challenges the view, implicit in many existing accounts of democratization (e.g., Acemoglu and Robinson 2000, 2001, 2006), that only large institutional reforms can have a lasting effect. It also describes a mechanism that can help explain de Tocqueville's observation that regimes are more vulnerable just after a reform (de Tocqueville, 2011 [1856]; Finkel and Gehlbach 2018): a reform can lead to an increase in activism, putting pressure on the regime to reform even more.¹⁵

2.2 Democratic backsliding

Our findings suggest that the erosion of some democratic rights can decrease activism, which in turn could make further anti-democratic reforms more likely. And so an initial anti-democratic reform that reduces representation or accountability, for example by capturing elected representatives or gerrymandering electoral districts, could set in motion a path-dependent process of democratic backsliding. Within the narrow corridor logic in Acemoglu and Robinson (2019), this would mean that the balance between the state and society breaks down, with the country starting to move towards autocracy. This mechanism can also account for the gradual nature of democratic backsliding (Haggard and Kaufman 2021; Levitsky and Ziblatt 2018).

¹⁵ One interpretation of our results is that pro-democratic reforms can increase the threat of revolution by facilitating collective action.

2.3 Long 19th century reforms

Our study contributes to the growing literature on the consequences of the 19th and early 20th century electoral reforms in Europe (e.g. Berlinski and Dewan 2011; Berlinski, Dewan, and Van Coppenolle 2014; Cox, Fresh, and Saiegh 2023; Larcinese 2009; Morgan-Collins 2023). Most of the work on the Great Reform Act has focused on its enfranchisement dimension, even though in practice the increase in the number of voters was relatively small (Fresh 2024).¹⁶ We focus instead on the redistribution of parliamentary seats. This was a more substantial change that, as we show, led to an increase in activism in the constituencies that gained representation for the first time. A number of scholars have claimed that this activism led to more reform (e.g. Maehl 1967), suggesting positive feedback between reform and activism.¹⁷ This would make the Great Reform Act a critical juncture that helped set in motion Britain's path-dependent process of democratization.¹⁸

2.4 Petitioning

Finally, this article contributes to our understanding of petitioning in non-democratic or quasi-democratic settings.¹⁹ Knights (2009) emphasizes that voting and petitioning

¹⁶ Studies that examine the enfranchisement dimension of this reform include Acemoglu and Robinson (2000), Aidt and Franck (2019), Ansell and Samuels (2015), Boix (2015), Collier (1999), and Lizzeri and Persico (2004).

¹⁷ The areas that gained representation were large and economically important, while those that lost representation had small populations and were declining economically.

¹⁸ In contrast, Vernon (1993) argues that the 19th century reforms led to a deterioration of participatory democracy in Britain.

¹⁹ There is a growing literature that shows that Communist eastern European states were responsive to petitions (Dimitrov 2014; Hilbig, Lueders, and Riaz 2023; Lueders 2022). In contrast, Sellars (2022) shows that Mexican bureaucrats responded very slowly to community petitions for land redistribution. co-existed in Britain well into the 19th century, while Huzzey and Miller (2020) show that petitioning increased in the aftermath of the Great Reform Act. Our identification strategy allows us to go further and show that the reforms, in particular the changes in parliamentary representation, had a causal effect on petitioning. There is also a growing body of work that shows that petitions can be used for political recruitment and mobilization (e.g. Carpenter 2016; Nall and Carpenter 2018; Carpenter and Moore 2014). Although we do not engage with this question, the fact that petitioning can have these effects helps reinforce our claim that the Great Reform Act set in motion a path-dependent process that would lead to deeper changes than the ones it introduced.

3 Historical background

3.1 The Great Reform Act

The Great Reform Act of 1832 was the first large reform of the British electoral system in several hundred years. The electoral rules at the time dated from the Middle Ages, and they were out of sync with the new economic geography created by the Industrial Revolution. Only some areas had representation, and some of these had lost population and had very few voters left. Meanwhile, the new industrial cities like Manchester had no representation in parliament.²⁰

The reform movement was formally launched with the creation of the reform societies in early 1830. The movement gained momentum in November 1830 when Lord Grey, of the pro-reform Whig party, was unexpectedly appointed as prime minister.²¹ The Act had two key dimensions. First, it updated the rules that determined who could vote, resulting

²¹ The Tories won the 1830 election, but conflict between internal party factions meant that they could not form a government. This allowed the Whigs to come into government.

²⁰ Figure A1 in the online appendix illustrates this for the three borough constituencies in the county of Essex.

in a modest increase in the total number of voters from around 176,000 to 281,000.²² Second, the Act eliminated many small constituencies, while giving representation to new constituencies that were created in areas that had recently experienced substantial population growth.²³

In order to depoliticize the reform, the government asked the chair of the Boundary Commission, the civil servant Thomas Drummond, to design a rule that would "scientifically" determine the relative importance of each constituency (Robson 2014). Drummond gave each constituency a score based on the number of houses within its boundaries and the property taxes paid on those houses in 1831. The 120 constituencies with the lowest scores went into what we call the Drummond list; these were the constituencies at risk of losing their parliamentary seats.²⁴ The final version of the Act stipulated that the 56 lowest ranking constituencies on the list would lose all their seats (these constituencies were in what was called Schedule A), the following 30 would lose only one of their two seats (Schedule B), while the remaining 34 would keep both of their seats. Furthermore, 42 areas in England and Wales with a population of more than 10,000 gained representation for the first time (Schedules C and D). The size of parliament worked as a soft constraint, meaning that to a large extent seats were redistributed rather than created. (The reform resulted in the House of Commons losing 13 English and Welsh seats.)

3.2 Petitions

Petitioning was widespread in 19th century Britain. Petitions were addressed to parliament, and once they arrived they were collected, recorded and set on a table for MPs to

²² At this time the population of England and Wales exceeded 13 million (Fisher 2009; Cannon 1973).

²³ Both before and after the reform, there were parts of the country that did not have representation. Areas with representation were like small islands in a sea of unrepresented territory.

²⁴ See Appendix A for a more detailed discussion.

examine (Leys 1955).²⁵ Any MP could pick up any petition and use it to start a debate, create publicity around an issue, or as "a stick for use in lobbying, private interviews, press campaigns, etc." (Fraser 1961).²⁶ The number of petitions on a topic and the number of signatures on these petitions were often seen as measures of popular opinion. Sometimes MPs compared the number of signatures on petitions in favor and against a particular bill (Huzzey and Miller 2020).²⁷ The consensus in the historiographical literature is that MPs took petitions very seriously.²⁸

Petitions were a key element in the repertoire of social activists. They were used to influence MPs by lobbying in favor or against particular pieces of legislation, and they were credited with the success of important social movements (Huzzey and Miller 2020). The issues they raised were wide-ranging, from topics of national interest like slavery, rights for Catholics and parliamentary reform, to questions of more local or sector-specific interest (see Table 1).

The Great Reform Act did not change the rules governing the petitions system. All citizens could send petitions, irrespective of whether they could vote or whether they lived in a constituency with representation. Often more than half of the signatures on

²⁵ Petitions were not addressed to individual MPs. We focus only on petitions sent to the House of Commons.

²⁶ Parliamentary rules on how to use petitions changed in 1835 (see Leys 1955). Our results are robust to restricting our sample to the years before the change.

²⁷ During the debate on Catholic emancipation in 1829, it was suggested that "the number of petitions presented of either class [for and against], describing the number of signatures annexed to each petition" should be published weekly "so as to enable the House to collect, as from a balance-sheet, the real sentiments of the nation upon this very important subject" (Hansard (1829) and quoted by Fraser (1961, p. 209)).

²⁸ MPs did not play a major role in organizing petitions. This is unsurprising: they did not need a petition in order to start a debate or argue for or against a piece of legislation. It is also possible that petitions organized by an MP would not have been taken seriously by parliament.

	1820-24	1825-30	1830-32	1832-35	1835-38
1	Slavery	Catholics	Slavery	Slavery	Slavery
2	Queen Caroline	Corn	Representation	Dissenters	Church rates
3	Agricultural distress	Slavery	Election by ballot	Lord's day	Newspaper

 Table 1: Most common petition topics

a petition came from people who did not have the right to vote (Phillips 1980). Most petitions were signed by anywhere between 20 and 200 individuals; some attracted more than 100,000 signatures (Fisher 2009). A large majority of constituencies sent petitions at some point in the period 1820-38 (see section 6), and in most years the number of people who signed petitions exceeded the number of people with the right to vote.

4 Representation and petitioning

Why would changes in parliamentary representation have an effect on petitioning? We argue that residents sent petitions because these were often effective, and that they were more effective when they came from areas that were represented in parliament. From this it follows that changes in representation would have led to changes in petitioning.

Political agency theory can explain why elected representatives would have responded to the demands of enfranchised individuals (e.g. Besley 2007), but there are also good reasons for why politicians may have taken seriously the petitions sent by disenfranchised residents. MPs may have viewed all petitions, regardless of who signed them, as informative about issues that could affect their re-election. Enfranchised residents could have held MPs accountable for all constituency-related matters, even those primarily affecting the disenfranchised.²⁹ Furthermore, MPs may not have been able to fully determine whether those who signed a petition were enfranchised, so that it could have been optimal for them to take all petitions seriously. Finally, MPs could have been well intentioned and

²⁹ At the time, electors were seen as representatives of the population at large, electing MPs on behalf of this population (Gash 1953).

felt a responsibility to represent all residents of their constituencies, whether enfranchised or not.

Consistent with the political opportunity structure framework (Gleditsch and Ruggeri 2010; McAdam 1982; Tarrow 1989), the introduction of representation would have changed the political opportunities of a constituency's residents. A local MP could have used the petitions sent from his constituency to initiate debates in parliament and push forward an agenda (Huzzey and Miller 2020); this would have created an incentive for his constituents to send petitions.³⁰ The presence of this MP would have also given a face to parliament, making petition-writing feel more personal. Groups and individuals, whether enfranchised or not, could have taken advantage of this opportunity by petitioning more. This leads to our main hypothesis:

Hypothesis 1 (Complements) Gaining representation leads to an increase in petitioning. Losing representation leads to a decrease in petitioning.

The alternative hypotheses are that there was no relationship between representation and petitioning, or that gaining representation led to a fall in petitioning (i.e. they were substitutes). This would have been the case, for example, if residents no longer felt the need to petition because they knew their local MPs would advocate for their views in parliament.³¹

Our hypothesis, which builds on the political opportunity structure framework, requires MPs to take seriously the views expressed in the petitions sent by their constituents. And so the complementarity between representation and petitioning we have hypothesized should only be observable in areas where local MPs were accountable to their constituents.

³⁰ Although petitions were addressed to parliament as a whole, it seems likely that the identity of the local MP mattered.

³¹ The view that representation and petitioning were substitutes is consistent with the account in Vernon (1993), who argues that Britain's 19th century electoral reforms led to a decline in political engagement.

In other areas, where for example MPs were under the control of local elites, we should not observe this relationship.³² This motivates our second hypothesis:

Hypothesis 2 (Accountability) Constituencies where MPs were controlled by local elites saw no decline in petitioning following a loss in representation.³³

Finally, the logic behind our main hypothesis is that the presence of a representative in parliament would have reduced the cost of petitioning and facilitated collective action. This effect should have been larger for groups that, like civil society, relied heavily on petitioning. This motivates our third hypothesis:

Hypothesis 3 (Civil society) A gain in representation had a larger effect on the number of petitions sent by civil society organizations.

For groups that could access parliament in other ways, for example by using their personal connections to politicians, a change in representation should have had a smaller effect on petitioning.

5 Data

We use data on 255 English and Welsh constituencies, which we divide into four groups: 56 that were on the Drummond list and lost all representation (Schedule A), 64 that were on the Drummond list and kept at least one of their two seats (30 in Schedule B and 34 that lost no seats), 93 that were not on the Drummond list and kept all their seats, and

³² In this case there was no effective representation to begin with, and so the loss of representation would result in no change in petitioning.

³³ Areas that gained representation had no MPs prior to the reform, and so no representative who could be under the control of a patron.

42 new constituencies created by the reform (in Schedules C and D).³⁴ Table 2 shows these four groups.

We collected information on all petitions sent to parliament between 1820 and 1838; there were over 18,000 petitions originating from the 255 constituencies in our sample.³⁵ For each petition, we recorded its topic, when it was sent and from where; for about half of the petitions we also have information on who sent them (see Appendix Figure A5).³⁶ We used the location from which petitions were sent (the parish, the town, etc.) to match petitions to constituencies. For a new constituency, its pre-reform petitions are all petitions sent from locations that after 1832 would fall within the boundaries of the new constituency. We aggregated the petitions by year and constituency.

We also collected data on how the Act changed the size of the electorate in each constituency. The median constituency saw a very modest gain of 143 voters, while about 30 percent of constituencies actually lost voters. This fall was due to the disenfranchisement of out-voters: individuals who had the right to vote in constituencies but lived elsewhere.³⁷

³⁴ We refer to the units of analysis as constituencies, even though some of these units had no representation before the reform and others had no representation after the reform. Our empirical analysis is restricted to the borough constituencies of England and Wales. For more details, see Appendix A.

³⁵ Appendix Table A1 reports summary statistics for all our data. See Appendix A for more information on how the data were collected.

³⁶ Appendix Figure A3 shows the distribution of petitions by sender type before and after 1832.

³⁷ Appendix A provides the details of how these data were collected. Appendix Figure A4 shows the change in the number of voters following the reform.

6 Empirical strategy

We examine how changes in parliamentary representation affected the number of petitions sent to parliament. Our unit of analysis is the constituency i in year t with $t = 1820, \dots 1838$. We estimate two different effects. First, in what we call case G, we consider a treatment group made up of the 42 new constituencies that gained representation for the first time. The control group is the 93 pre-1832 constituencies that kept their seats and were not at risk (i.e., were not on the Drummond list). The reform gave representation to the treatment group because these constituencies had a large population of over 10,000 residents. Fourteen of the new constituencies were large towns that had expanded rapidly during the Industrial Revolution, while five were boroughs in the metropolitan area around London. The rest were relatively large market towns spread across the country.³⁸ Every constituency in this sample sent a petition at some point between 1820 and 1838. Panel (a) in Figure 1 shows the number of petitions sent before and after the reform by constituencies in these treatment and control groups.

Second, we restrict our sample to constituencies on the Drummond list, i.e. those that were at risk of losing representation. The treatment group is made up of the 56 constituencies that lost all seats, while the control group is made up of the 64 constituencies that kept one or both seats. We refer to this as case L, as it focuses on the loss of representation (see Table 2). All 120 constituencies on the Drummond list were small and of little economic importance as measured by their number of houses and tax payments. Of these constituencies, 92.5 % sent a petition at some point between 1820 and 1838.

³⁸ The average population in the 42 new constituencies was around 58,000, while it was about 22,000 in the control group, with many of these constituencies having less than 10,000 residents. In the robustness analysis, we check our results using a more restricted control group that only includes constituencies with more that 10,000 residents. This makes little difference to our results.

	Control group	Treatment group
Case G	Pre-1832 constituencies not at risk of losing representation (i.e. not on the Drummond list)	New post-1832 constituencies (i.e. gained representation for the first time)
Observations	93	42
Case L	Pre-1832 constituencies at risk of losing seats (i.e. on the Drummond list) that kept at least one seat	Pre-1832 constituencies at risk of losing seats (i.e. on the Drummond list) that lost all seats
Observations	64	56

Table 2: Treatment	and	control	groups
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Notes: The Drummond list refers to the list of constituencies at risk of losing representation. Appendix Table A2 provides a detailed overview of the constituencies in our sample.



Notes: Case G: panel (a) shows the average number of petitions sent per year before and after the reform by the treatment group (the 42 new constituencies that gained representation for the first time) and the control group (the 93 pre-1832 constituencies that kept their seats and were not on the Drummond list). Case L: panel (b) shows the average number of petitions sent per year before and after the reform by the treatment group (the 56 constituencies that lost all representation) and the control group (the 64 constituencies at risk of losing representation, i.e. on the Drummond list, that kept at least one seat).

Figure 1: Petitions sent between 1820 and 1838.

Panel (b) in Figure 1 shows the number of petitions sent before and after the Reform by constituencies in these treatment and control groups.

The Great Reform Act not only changed representation, but it updated the voting eligibility criteria. As we discussed in Section 3, for the constituencies that kept representation, the change in the number of voters was small on average and negative in about a third of cases. Although our view is that these constituency-level changes in the number of voters were too small to have much of an effect, the estimates will still combine the effect of losing or gaining representation with the effect of the change in the size of the electorate.³⁹ We address this compound treatment issue in Section 7.1.

All areas with more than 10,000 residents and no representation gained it for the first time. This clear population cutoff, combined with the desire to keep the number of MPs roughly constant, suggests that other pre-existing characteristics are unlikely to have played a role in determining which areas gained representation. Meanwhile, the Drummond rule ensured that the constituencies that lost seats were chosen on the basis of the pre-existing number of houses within their boundaries and past taxes paid on those houses; neither could be easily manipulated. It follows that reverse causality, in the sense that petitioning could have affected the details of the reform, is unlikely to be a serious concern. Yet the reform dominated British politics in the years between 1830 and 1832, and many of the petitions sent during this time were related to this issue. We therefore exclude the years 1830-32 from our analysis: our pre-treatment period is 1820-29 and our post-treatment period is 1833-38.⁴⁰

7 Results

Our core specification is

⁴⁰ In section 7.3 we show that our results are not affected by the inclusion of the years 1830-32 in the analysis. The robustness of our results reassures us that Drummond's approach was effective at preventing the manipulation of the reform process.

³⁹ The change in the socio-economic attributes of the average voter also appears to have been minimal (Gash 1953; Salmon 2002).

$$ln(petitions+1)_{i,\tau} = \beta_0 + \beta_1 R_i + \beta_2 P_\tau + \beta_3 (R_i \times P_\tau) + e_{i,\tau} \tag{1}$$

where we time-average the data for each constituency before and after the treatment year.⁴¹ The outcome variable is the log of the number of petitions (plus one) sent from each constituency, where *i* indexes constituencies and $\tau \in \{b, a\}$ indicates if the observation is from before (b) or after (a) the reform. The indicator variable R_i equals 1 when constituency *i* is in the treatment group and 0 if it is in the control group; P_{τ} is an indicator variable that equals 1 after the reform (i.e. for years 1833 to 1838) and 0 before it (i.e. for years 1820 and 1829). The parameter β_3 is the treatment effect of interest. This specification does not make use of the time series information in the data and so its t-statistics are not inflated by autocorrelation (Bertrand, Duflo, and Mullainathan 2004). We estimate this specification using ordinary least squares (OLS) and cluster standard errors at the constituency level, as recommended by Roth et al. (2023).

Table 3 reports the results. The estimates for case G are reported in column (1). We find a positive and highly significant average treatment effect: the constituencies that gained representation for the first time petitioned more that they would have done without representation. This average treatment effect is large: gaining representation led to an increase of 48% in the number of petitions sent to parliament, relative to the counter-factual of not gaining representation.⁴² Case L focuses on the constituencies on the Drummond list, comparing those that lost all representation to those that kept at least one seat. The estimated ATE is reported in column (2) and is negative and highly significant. This implies that a constituency that lost all representation petitioned less than it would have done if it had not lost all representation. This average treatment effect

⁴¹ That is, we average so that for each constituency we have at most one pre-treatment and one post-treatment observation.

⁴² We calculate this using the coefficient in column (1) and the formula $(e^{coefficient} - 1) \times 100$.

	(2)	(1)
	Log (pet	itions+1)
$\mathbf{R} \times \mathbf{P}$	0.39^{**}	-0.30**
	(0.075)	(0.049)
	[0.16]	[0.076]
R	-0.084	-0.40**
	(0.096)	(0.041)
Р	0.66^{**}	0.52**
	(0.036)	(0.034)
Constituencies	135	120
Observations	270	240
Adjusted \mathbb{R}^2	0.286	0.572
Case	G	\mathbf{L}

 Table 3: The main difference-in-differences results

Notes: ** p<0.01, * p<0.05, + p<0.1. The table reports estimates of β_3 in equation (1). We report standard errors clustered at the constituency level (in parentheses) and White robust standard errors (in square brackets). Case G: the treatment group ($R_i = 1$) is the new constituencies that gained representation for the first time and the control group is the pre-1832 constituencies that kept their seats and were not on the Drummond list. Case L: the treatment group ($R_i = 1$) is constituencies that lost all seats and the control group is constituencies at risk of losing representation (i.e. on the Drummond list) that kept at least one seat. Data from 1830-32 are excluded.

is large: losing both seats reduced petitions by 26% relative to keeping representation.⁴³ These results show strong support for hypothesis 1: representation and petitioning were complements.

Difference-in-differences produces causal estimates when the treatment and control groups follow parallel trends. Whether they do is ultimately an assumption, but we check whether this assumption is plausible by investigating whether the pre-treatment trends appear to be parallel. Figure 2 plots log petitions for 1820-29. For case G, the pre-treatment trends are very similar for the two groups, particularly after 1825, and the sample is balanced. For case L, the control group exhibits more volatility than the treatment group, but they are roughly parallel. The constituencies in the treatment

⁴³ We calculate this using the coefficient in column (2) and the formula $(e^{coefficient} - 1) \times 100$.



Notes: See the notes to Table 3 for a description of cases G and L.

group petitioned more, and so the sample is not balanced, an issue we address later in this section.

We can use the time series information in our data to consider an event study implementation that interacts the treatment dummy R_i with year dummies before and after the reform. The estimated coefficients on these interactions are shown in Figure 3. As with the plots in Figure 2, the plot for case G shows no evidence of divergent trends prior to treatment. In case L, there is some evidence that the trends diverge prior to treatment.

We now turn to two methods that help address the unbalanced nature of sample L and the fact that its trends are not parallel. (Although sample G is balanced and exhibits parallel trends, we report the results for this case too.) First, we estimate a specification that fully exploits the time variation in the data and allows us to include county-specific time trends, helping make the common trends assumption more tenable. Our specification is

$$ln(petitions + 1)_{i,t} = \delta_i + \eta_t + D_c(i) \times t + \gamma(R_i \times P_t) + e_{i,t},$$
(2)

where the dependent variable is the log number of petitions sent from each constituency; *i* indexes constituencies and *t* indexes years. The δ_i are constituency dummies and the η_t



Notes: See the notes to Table 3 for a description of cases G and L. The estimated coefficients are for the interactions between the treatment dummy (R_i) and the year dummies (P_t) . We use the year before the treatment (1829) as the base year. We report the estimated coefficients for the interactions with 95 percent confidence intervals (based on standard errors clustered at the constituency level).

Figure 3: Event study coefficients

are year effects. The $D_c(i)$ are a set of dummies indexed by the county c; the dummy for a given county c equals 1 when constituency i is in that county. The dummy variable R_i equals 1 for the constituencies in the relevant treatment group and 0 otherwise, while P_t equals 1 in the post-treatment years (1833 to 1838) and 0 otherwise (1820 to 1829). The coefficient of interest is γ and we cluster the standard errors at the constituency level. Note that our treatment comes on at the same time for all treated units, and so we avoid the problems that arise when treatment is staggered.

Table 4 reports the results. The specifications in columns (1) and (3) give the same point estimates as Table 3, but the standard errors are slightly different. In columns (2) and (4) we include county-specific trends to make the common trends assumption more tenable, and we find that the estimated average treatment effects are a bit smaller but remain highly significant.

Second, we employ the synthetic control method recently developed by Hazlett and Xu (2018).⁴⁴ This method weighs the pre-treatment outcomes for the control group so that they match as closely as possible the pre-treatment outcomes for the treatment group.

⁴⁴ We implement this using their R package tjbal.

	(1)	(2)	(3)	(4)
		Log (pet	itions+1)	
$\mathbf{R} \times \mathbf{P}$	0.394^{**}	0.332^{**}	-0.301^{**}	-0.257^{**}
	(0.0750)	(0.0841)	(0.0488)	(0.0511)
Constituencies	135	135	120	120
Observations	2,160	2,160	1,920	1,920
R^2	0.534	0.560	0.320	0.336
County trends	no	yes	no	yes
Case	G	G	L	L

 Table 4: Difference-in-differences estimates: time series specifications with county-specific trends

Notes: ** p<0.01, * p<0.05, + p<0.1. The table reports the estimate γ from equation (2). We report clustered standard errors at the constituency level. See the notes to Table 3 for a description of cases G and L. Data from 1830-32 are excluded. County-specific trends included in columns (2) and (4).

The method looks at event study coefficients, and so for the reasons outlined above we exclude the years 1830-32 from the estimation. The results are shown in Figure 4. The plots on the left-hand side show the synthetic counterfactual values (in the dashed lines) and the actual values (in the solid lines). In both cases the plots confirm the estimated effect: a gain in representation leads to an increase in petitioning (case G), while the loss of representation leads to a decrease in petitioning (case L). The plots on the right-hand side show the size of the treatment effect. Prior to treatment, we see horizontal lines because of the way the synthetic control is constructed. In the post period, we can clearly see the size of the treatment effects on the treated (ATT) and their p-values, and in both cases these estimates are statistically significant. The results from the synthetic control method confirm the presence of large and significant treatment effects.

7.1 The effect of the change in the suffrage rules

The Great Reform Act changed both the voting qualification rules and the distribution of parliamentary seats across geographical areas. This raises the concern that our estimates



Figure 4: Synthetic control results. These estimates do not incorporate any controls. The years 1830-32 are dropped. The first post-treatment year is 1833. The bars labeled Ntr on the figures on the right hand side show the number of constituencies in the treatment group.

may be capturing the compound effect of both of these changes. We conduct two tests to examine the extent to which the change in the number voters affected petitioning.

First, we estimate the two treatment effects separately and include a triple interaction. Column (1) in Table 5 reports the estimates for case G. The coefficient on $R \times P$ is still positive and significant. The change in the number of voters V has no effect on petitioning: the two interaction terms $P \times V$ and $R \times P \times V$, which capture the possible effect of the change in voters, have insignificant coefficients. Column (2) repeats the exercise for case L. The coefficient on $R \times P$ remains negative and significant. The coefficient on V is negative, so that in the constituencies that were to keep some representation after 1832, those with more voters prior to 1832 petitioned less. Again, the two interaction terms $P \times V$ and $R \times P \times V$, which capture the possible effect of the change in voters, have insignificant coefficients.

Second, column (3) reports results for a regression that correlates the log number of petitions with the log number of voters in each of the 157 constituencies that existed both before and after the reform. We control for log population and include a time effect and constituency fixed effects. This shows that there is no correlation between the number of voters and petitions. These results support our claim that the difference-in-differences estimates capture the effect of changes in representation.

7.2 Alternative measures of activism

So far we have focused on petitions as our measure of local activism. Petitions were a key element in the repertoire of activist groups (Huzzey and Miller 2020), but they have another advantage: we observe the full universe of petitions, and so avoid the measurement error associated with the use of event catalogues collected from news sources. Yet petitions were only one element in the repertoire of contention, and activism could have taken a variety of other forms. We now consider how the change in representation affected peaceful and violent protest.

Tilly (1995) and Horn and Tilly (1988) used newspaper reports to assemble a large dataset of popular protest for the period 1828-34. We geo-referenced these data and matched them to the constituencies in which they happened.⁴⁵ In order to have sufficient information to conduct the estimation, we aggregate the different types of protest. For case G, we separate protests into peaceful and violent, where violent protests include riots and violent demonstrations. For case L, we look at the total number of protests and

⁴⁵ Appendix A explains how this was done.

	(1)	(2)	(3)
	Log((petitions+1)
R	-0.077	-0.43**	
	(0.11)	(0.048)	
Р	0.66^{**}	0.52^{**}	
	(0.038)	(0.034)	
V	0.00011	-0.000097^{*}	
	(0.00011)	(0.000047)	
$\mathbf{R} \times \mathbf{P}$	0.28^{**}	-0.35**	
	(0.092)	(0.061)	
$\mathbf{R} \times \mathbf{V}$	0.000012	-0.000023	
	(0.000023)	(0.000039)	
$P \times V$	-0.00010	-0.00012	
	(0.00011)	(0.00020)	
$\mathbf{R}\times\mathbf{P}\times\mathbf{V}$	0.000046	-0.00043	
	(0.000030)	(0.00036)	
Log voters			0.0064
			(0.021)
Log Population			-0.11*
			(0.046)
Constituencies	135	120	157
Observations	270	240	314
R^2	0.315	0.584	0.780
Case	G	L	n.a.

Table 5: Compound treatment: change in the suffrage vs. change in representation

Notes: ** p<0.01, * p<0.05, + p<0.1. V refers to the change in the number of voters. The table reports clustered standard errors in parentheses. See the notes to Table 3 for a description of cases G and L. Data from 1830-32 are excluded. Column (3) is estimated using the sample of 157 constituencies that existed both before and after the reform, controlling for a post period dummy and constituency fixed effects. See Appendix A for more information on the population data.

at peaceful protests separately, where peaceful protests include demonstrations, public meetings and gatherings.⁴⁶ For each type of protest, we record how many there were and the approximate number of participants. Despite the large measurement error associated

⁴⁶ There are only a handful of violent protests reported for constituencies in case L, and so we cannot estimate results for this category separately. We suspect that violent protest was relatively rare in these places because, being small, those involved would have been quickly identified and punished.



Notes: The figure shows estimates of β_3 and 90 percent confidence intervals (constructed using clustered standard errors). They are from a version of equation (1) where the outcome variable is the Tilly public protests, measured by either the (log of) the number of people involved or the number of events. Data from 1830-32 are excluded. See Appendix A for information on how the protest data were constructed. See the notes to Table 3 for a description of cases G and L. Appendix Table A3 reports the full results.

Figure 5: Difference-in-differences estimates using Tilly's public protest data

with these data, they enable us to investigate whether representation had an effect on the broader repertoire of local activism.⁴⁷ In contrast to petitions, which reflect activism exercised through an institutional channel, the protests in the Horn and Tilly (1988) dataset were largely non-institutional.

Figure 5 reports estimated ATEs for cases G and L from equation (1), where the outcome variable is different measures of public protest taken from the Tilly data. The point estimates of β_3 are positive for case G and negative for case L. The effects are not precisely estimated and only statistically significant in a few cases, all related to peaceful protest. This suggests that representation not only triggered more petitioning, but also encouraged other forms of peaceful activism. It appears to have had no effect on violent protest.⁴⁸

⁴⁷ Horn and Tilly (1988) collected data from a sample of local newspapers, which in turn would have been selective in terms of what they reported.

⁴⁸ Table A4 in the online appendix reports a version of equation (1) in which we control for the Tilly protests. Our goal is to check whether the ATEs for cases G and L become statistically insignificant once we include these other measures, as this would suggest

7.3 Robustness checks

We have conducted a number of robustness checks. We briefly summarize the results here; the full results are reported in Appendix B.

7.3.1 Petitions in 1830-32

So far we have excluded the years 1830-32 from the analysis. An alternative is to keep 1830-32, but to drop all petitions related to parliamentary reform. The results for this sample are reported in columns (1) and (2) of Appendix Table A5; they are similar to those reported in Table 3. Columns (3) and (4) of Appendix Table A5 report the results for a specification of equation (1) estimated using all petitions sent in 1820-38. The results again change very little.

7.3.2 Alternative specification of the outcome variable

Our main specification uses a logarithmic transformation of the outcome variable to reduce the skew in the data. To check that this is not unduly affecting our results, columns (5) and (6) in Appendix Table A5 report results from a specification of equation (1) that uses the absolute number of petitions as the outcome variable. The results are qualitatively similar to the main results.

7.3.3 Restricting the post-treatment period

In the main specification, the post-treatment period runs from 1833 to 1838. Parliamentary rules were changed in 1835 so that MPs could no longer use a petition to start a debate. Petitions could still be used in debates that had been started in other ways (see Leys 1955). To rule out the possibility that our estimates just reflect the effect of this that the petitions variable in our core regressions is picking up the effect of other forms of protest. We find that the number of participants in local protests is positively correlated with petitioning in both cases G and L, but the estimates of β_3 are minimally affected and remain highly significant. This also means that the changes in petitioning do not simply reflect a substitution towards or away from other activities. change, columns (1) and (2) in Appendix Table A6 report results for regressions where the post-treatment period is restricted to 1833-34. This makes little difference to the size and significance of our results.

7.3.4 Flexible controls for population

Our main specification does not control for population. While the constituency fixed effects eliminate cross-sectional differences in the size of constituencies, population dynamics could have induced differential time trends. Columns (3) to (6) in Appendix Table A6 report results for versions of equation (1) that control for (log) population and (log) population squared.⁴⁹ This makes little difference to our results. We also estimated all of our robustness checks with population as a control and this does not change any of the results.

7.3.5 Alternative treatment and control groups

We consider a variation of case G where the control group only includes the constituencies in the original control group that had more than 10,000 residents in 1831. We use 10,000 because this was the population cutoff used to determine which areas would gain representation. The new control group therefore includes all pre-1832 constituencies that were not on the Drummond list *and* had over 10,000 residents. The results are reported in column (1) of Appendix Table A7. The new estimated ATE is 0.30. This estimate is statistically significant, although smaller than the 0.39 reported in column (1) of Table 3.

A variation on case L exploits the fact that some of the constituencies that were due to lose representation according to the original bill of March 1831 were not on the final list included in the bill that received Royal assent in 1832. As before, our treatment group is the Schedule A constituencies that lost all seats. Our new control group is the Schedule B constituencies (i.e. those that kept one seat) plus those constituencies that in the March

⁴⁹ Population data are reported in the Population Censuses of Great Britain. See Appendix A for information on how these data were collected.

1831 draft were on Schedule A or B, but were ultimately not included in these Schedules and so lost no seats. The results are reported in column (2) of Appendix Table A7. The estimated ATE is -0.28, which is similar to that for case L in Table 3.

8 The role of accountability

We hypothesized that accountability could have mediated the effect of the reform: the loss of representation may have decreased petitioning only in constituencies where the local MPs were accountable to residents (hypothesis 2). An accountable MP who took petitions seriously would have provided local residents with a strong incentive to write and send petitions. In this case a loss of representation could result in less petitioning. In contrast, in constituencies where MPs were not accountable, for example because they were under the control of a patron, residents would have been less motivated to send petitions. And so in this case a loss of representation would have had little effect on petitioning.

We can examine the importance of accountability by looking at case L and including a triple interaction between the ATE and a measure of the extent to which the constituency's MPs were controlled by a patron prior to the reform.⁵⁰ Many seats were controlled by aristocrats or local businessmen who in essence appointed the local MP, and so this MP was accountable to them. We construct a dummy variable *patronage* that equals 0 when there was little or no patron control in the constituency and 1 when there was full patron control.⁵¹ Given that the ATE effect from Table 3 is negative for case L, hypothesis 2 suggests that the triple interaction will be positive.

⁵⁰ We cannot conduct this estimation for case G because the constituencies in the treatment group had no representation prior to the reform, and so had no MP that could be under the control of a patron.

⁵¹ The is coded from Philbin (1965), see Appendix A for details. This index does not predict which of the constituencies on the Drummond list fall into the treatment or control groups.

	(1)
	Log (petitions+1)
R	-0.33**
	(0.036)
Р	0.53^{**}
	(0.034)
Patronage	-0.12**
	(0.036)
$\mathbf{R} \times \mathbf{P}$	-0.54**
	(0.090)
$\mathbf{R} \times \mathbf{Patronage}$	0.039
	(0.043)
$P \times Patronage$	-0.34**
	(0.034)
$\mathbf{R} \times \mathbf{P} \times \mathbf{Patronage}$	0.58^{**}
	(0.097)
Constituencies	120
Observations	240
R-squared	0.578
Case	L
Observations R-squared Case	$\begin{array}{c} 240\\ 0.578\\ \mathrm{L} \end{array}$

 Table 6:
 The triple interaction with patronage

Notes: ** p<0.01, * p<0.05, + p<0.1. Clustered standard errors in parentheses. Constant not reported. The table reports the estimated β_3 from a version of equation (1) that is augmented with a set of interactions with the dummy variable *patronage*. This dummy equals 1 for constituencies that were fully controlled by a patron and 0 for those with little or no patron control. See the notes to Table 3 for a description of case L. Data from 1830-32 are excluded. See Appendix A for information on how the patronage dummy was coded.

Table 6 reports the results. The coefficient on $R \times P$ is negative and statistically significant, meaning that the loss of representation $(R_i = 1)$ reduced petitioning in constituencies with no patron control. The estimated coefficient on the triple interaction $R \times P \times Patronage$ is positive and statistically significant. In constituencies with patron control, the ATE is very close to zero: the coefficient is 0.04 and the F-stat (for the test of it being equal to 0) is F(1, 199) = 1.21 with a *p*-value of 0.27. This is consistent with hypothesis 2: the complementarity between representation and petitioning was driven by the presence of MPs who were accountable to the residents of their constituencies.



Notes: The figure displays the ATE in equation (1) for Case G, for different types of senders. Appendix Table A8 reports the full results and defines the different groups.

Figure 6: The ATE for different types of senders (case G)

9 The petitioners

We use information on who sent petitions to examine whether particular groups were behind the changes we have documented. We divide the senders into four groups: civil society, businesses, religious organizations, and local government bodies.⁵² Figure 6 reports the estimated ATEs for case G using equation (1), where the outcome is the number of petitions sent by each of the four groups.⁵³ Civil society groups petitioned significantly more after their area gained representation, which is consistent with our hypothesis 3. Business groups also petitioned more after their area gained representation. Meanwhile, there was a small and insignificant reduction in petitioning from religious organizations and a small insignificant increase in petitioning by local government bodies.

⁵² See Appendix A for precise definitions

 $^{^{53}}$ We do not have enough information to reliably estimate treatment effects by type of sender for case L.

10 Discussion and concluding remarks

This article shows that constituencies that lost representation as a result of the Great Reform Act saw a fall in petitioning, while those that gained representation saw an increase in petitioning. This is consistent with our main hypothesis that representation and petitioning were complements. These results imply that democratic reforms, in this case the granting of representation to areas that previously had no MPs, can lead to increased activism as measured by the number of petitions sent to parliament. These results contribute to a growing literature that documents how democratic reforms affect activism and protest (Degrave, Lopez Peceño, and Rozenas 2023; Finkel, Gehlbach, and Olsen 2015; Lacroix 2022).

When focusing on the constituencies that lost seats, the fall in petitioning was driven by constituencies where the MPs were accountable to residents. This supports hypothesis 2: accountability helps explain the complementarity between representation and petitioning. This contributes to the literature on the political opportunity structure framework (Gleditsch and Ruggeri 2010; McAdam 1982; Tarrow 1989) by showing that the expected response of MPs had a significant effect on petitioning. Furthermore, consistent with our hypothesis 3, we show that the positive effect of representation was larger for civil society, a group with limited access to other forms of influence.

The relationship we document is not produced by either (i) increases in petitioning following the perceived success of the petitions calling for parliamentary reform, or by (ii) the disappointment of citizens who wished for a more comprehensive reform and responded by petitioning more.⁵⁴ The first of these accounts would imply that areas that lost representation, having seen the effectiveness of the petitions sent by other areas, would have increased their petitioning. But we find that they did the opposite. In the second of these accounts, the disappointment would have been greater in areas that lost

⁵⁴ This latter was the case in imperial Russia (Finkel, Gehlbach, and Olsen 2015).

representation, hence these areas should have seen a larger increase in petitions. But again, this is the opposite of what we find.

Our findings show how a small reform may set in motion a process that leads to deeper reforms in the future. In particular, reforms that improve representation can increase activism, which in turn creates pressure from below for more reform. This can account for de Tocqueville's observation that non-democratic regimes are more vulnerable after they have reformed (de Tocqueville, 2011 [1856]; Finkel and Gehlbach 2018). It is also consistent with the view in the historiographical literature that the Great Reform Act was important because it facilitated future reforms (Maehl 1967). Our findings help justify the view that the Great Reform Act was a critical juncture that set in motion a path-dependent process of democratization in Britain.

A number of open questions remain. First, we know that both enfranchised and disenfranchised individuals signed petitions, but we do not know how the behavior of each group was affected by the changes in representation. However, the existing qualitative evidence makes us confident that our results are not driven by the behavioral response of the enfranchised. For example, Phillips (1980) documents that it was common for more than half of a petition's signatures to come from disenfranchised individuals. And although an individual could submit a private petition, most petitions were signed by between 20 and 200 individuals, with some collecting over 100,000 signatures (Fisher 2009). Second, while we have outlined a number of possible reasons for why disenfranchised individuals may have signed petitions, we do not have the data to explore these theoretical links in more detail. Nevertheless, our historical case provides us with useful variation that allows for an identification strategy that would not be workable in other contexts. It also enables us to reassess the importance of the Great Reform Act, allowing us to conclude that its central role in the historiography of Britain is fully justified.

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Can democratic reforms promote political activism? Evidence from the Great Reform Act of 1832

Supporting information

Online appendix (Not for publication)

A Data description

This appendix documents the data and their sources. Table A1 reports descriptive statistics for the variables used in the estimations. Table A2 provides a detailed overview of the different types of constituencies and how they were affected by the Reform Act.

Petitions

The information on the over 18,000 petitions received by the British House of Commons from the old and new parliamentary constituencies between 1820 and 1838 is from The Journals of the House of Commons, volumes LXXV to XCIII. For the period 1820 to 1837, the General Index of the Journals of the House of Commons contains a list of all petitions, with information on their geographical origin (e.g., village, hamlet, parish, city, borough, county, union, parliamentary constituency, etc.), when it was submitted (i.e., the parliamentary session), its topic (e.g., slavery, parliamentary reform, taxation) and in about half the cases who submitted it (e.g., inhabitants of Cambridge, manufacturers of iron in Sheffield; Old men's club of Manchester, clergy of Norwich). For 1838 onwards, there is no index and the original volumes must be searched directly to extract the information. We coded volume XCIII for 1837-38. The list of petitions was created by searching for each constituency in the digitalized version of the General Index and the part of volume XCIII that records the petitions for the 1837-38 session. In doing so, we had to address a number of problems:

• Location names: Some location names are not unique. We recorded all petitions associated with a name (say Preston) and then in a second step excluded the ones that were not related to the parliamentary constituency (or if the location was not represented at the time but had been or would be later to the town) of that name. A particular problem was related to constituencies that share a name with a shire, e.g., Warwick. These were investigated and petitions allocated between the borough constituency and the county which in most cases were clear from the

context. A final problem was with places with that have the same name e.g., St Ives in Cornwall and St Ives in Huntingdonshire which again had to be evaluated from the context on a case-by-case basis. The measurement error left in this coding is minimal.

- County constituencies: It is not possible to create a list of petitions from a county without having a complete list of all the towns within that county. In a subset of cases, it was made explicit that a petition was from a county (e.g., the citizens of Cambridgeshire), but we do not include the county constituencies in the analysis because the petition counts are very incomplete.
- City of London: London refers to many places other than the City of London (which had representation). In some cases it is possible to pin-point the location as being in the City by looking for keywords like City of London, Corporation, Lord Mayor, liverymen, and the name of the wards within the City. Others can be attributed by searching for street names. But in many cases this cannot be done, for example when the petition came from the Merchants of London, Westminster and London, etc. For this reason we do not include the City of London in our analysis.

For about half the petitions, we have information on who sent them:

- Religious groups: Churches, bishops, priories, clergy, etc. These can be subdivided by denominations.
- Citizens: inhabitants of.., named person of.., householders of..., electors of..., etc.
- Societies: Working men's society of.., literacy and philosophy society of.., Old men's club, etc.
- Local government: mayor, corporation, union, magistrate, aldermen, parish council, etc.

- Business: merchants of... attorneys, trustees, banks, subscribers, chairman of business meeting committee, journeymen, trade groups, etc.
- Transport: train, turnpikes, road and canals. These are sometimes hard to attribute geographically, and should be considered as a separate category.

Constituencies

For each borough constituency, we have recorded its geocode and county. The petitions data was aggregated by year (from 1820 to 1838) and constituency, and so this is our unit of analysis. We have the following categories of constituencies:

<u>Pre-reform</u>: 216 borough constituencies.⁵⁵ Of these, 202 were in England, 12 in Wales, 2 were university constituencies (Oxford and Cambridge) and one is the City of London. We exclude the two university constituencies and the City of London, leaving us with 213 pre-reform constituencies.

Of these 213, 120 were in the Drummond list of contituencies at risk of losing seats. These were divided into 56 that lost all seats (Schedule A), 30 that lost only one seat (Schedule B), and 34 that kept all their seats. To determine the relative importance of these 120 borough constituencies, Thomas Drummond devised a four-step procedure: i) divide the number of houses in each borough by the average number of houses in the 120 constituencies; ii) divide the value of assessed property taxes in each constituency by the average assessed taxes paid across the set of 120 constituencies; iii) add the results of i and ii; and iv) weigh the outcome by 1000 to avoid decimals (UK Parliamentary Papers, 1831-32, House of Commons Papers, XXXVI.185 (44)).

<u>Post-reform</u> The 64 constituencies in the Drummond list that kept some representation, plus the 93 that were unaffected, plus 42 new post-reform constituencies (Schedules C and D, 41 in England and 1 in Wales).

Special cases

⁵⁵ There were also 52 county constituencies, 40 in England and 12 in Wales, that we exclude from the analysis.

- Swansea in Wales, which had previously been part of Cardiff, became an independent borough constituency but is not included in the sample. Before the reform, part of Swansea contributed to Cardiff District. After the reform, Swansea was together with Aberavon, Kenfigg, Loughor and Neath, which also contributed to Cardiff District moved into a new Swansea District. Swansea was, therefore, not a 'new' district in the sense that the constituent parts had not be represented before and it was not a surviving district either because it did not exist as a separate entity before the reform.
- Weymouth and Melcombe Regis, which had previously returned two MPs each but was effectively one constituency, were merged into one borough with the right to return two MPs. This constituency is included as one constituency before and after.

Reform Bill

The reform bill was first presented in the House of Common in March 1831 and it included drafts of the Schedules: borough constituencies that were to lose all seats (A), keep one of two seats (B), and the new constituencies (C to gain two seats and D to gain one seat). During the parliamentary procedures, amendments were made that 'saved' some constituencies. The initial draft of Schedule A included 60 constituencies and the draft of Schedule B included 46. The final bill included fewer constituencies, partly because the Drummond list was used to decide the final Schedules and partly because some constituencies that had been placed in Schedules A and B were moved out because the population data from the 1821 Population Census was incorrect and these constituencies had considerably larger populations.

Voters

We collected information on the number of voters before the reform (c. 1831) and after the reform (at the time of the 1832, 1835 and 1837 elections):

• <u>Pre-reform c. 1831.</u> For the English constituencies, we used primary sources to record the number of voters is each of the constituencies in 1831 as reported

to the Boundary Committee by local officials (UK Parliamentary Papers, 1831-32, XXXVI.489, 607 (112 209), supplemented in a few cases with information from UK Parliamentary Papers, 1830-31, X.53 (338)). For Welsh constituencies (called districts), the data on the number of voters were constructed from the complete Boundary Report (UK Parliamentary Papers, 1831-32, XXXVIII.1, XXXIX.1, XL.1, XLI.1 (141)), as it was necessary to aggregate voters across the contributory constituencies. For the constituencies where the local officials failed to report, we use the information from the J. Wade (1831), The Extraordinary Black Book, London: Effingham Wilson, pp. 235-44.

• <u>Post-reform 1832-37.</u> Information on the number of registered voters is from Salmon (2002, Appendix 3).

Patronage

We use a *patronage index* that codes the degree of patron control in each constituency prior to the Reform Act:

- The index is equal to 0 if the constituency was neither controlled by a patron nor singled out as one of the "rotten boroughs" to be disenfranchised by the Reform Bill and held at least one contested election between 1802 and 1831.
- The index takes the value 1 if the constituency was wholly or partly controlled by a local patron or by the Treasury, or if it was one of the "rotten boroughs", or if no contested election was held between 1802 and 1831.
- The index is equal to 2 if a constituency was both controlled by a patron and considered to be rotten.

This is coded from Philbin (1965), see Aidt and Franck 2013 for more details. In the analysis, we use a dummy variable, *patronage*, that is equal to 1 if *patronage index* is equal to 2 and 0 otherwise.

Population

We collected information on the population of each borough, but there are a number of complications in coding these data. The data sources are the 1821, 1831 and 1841 Population Censuses:

- For the pre-reform constituencies, the 1821 and 1831 censuses record information for the parliamentary boundaries. We use the data recorded in the 1821 and 1831 Population Censuses to measure the size of each constituency in 1821 and 1831. For the pre-reform constituencies that survived, the 1841 Census reports population data for the correct (new) boundaries.
- For the new constituencies (Schedules C and D), the 1841 census reports the population data for the correct boundaries. For 1821 and 1831, the population data can be constructed in two steps. First, the original and final Reform Bills contain the Schedules C and D specifying which parishes, towns or townships will make up the new borough constituency. Second, the sub-population for these parishes, towns or townships can be found in the 1821 and 1831 Censuses and a total calculated. The 1831 data can be verified in the report of the Boundary Commission which was tasked with drawing up the boundaries of the new borough constituencies (UK Parliamentary Paper, 1831-32, Vol. 37, XXXVII.1 (20)).
- For the constituencies in Schedule A that lost both seats, the 1841 census does not report population data for the old parliamentary boroughs. The information can be constructed from information in the census about parishes and townships. There may be some measurement error associated with this.
- We do not have any reliable estimates of the population of the two university constituencies (past graduates and scholars) before the reform.

Popular protest

To quantify the broader patterns of activism and mass mobilization, we draw on Horn and Tilly (1988) and Tilly (1995). These studies collected information on various forms of "popular protest" or "contentious gatherings" in England between 1828 and 1834, using textual analysis of eight London-based periodicals (Annual Register, Gentleman's Magazine, Hansard's Parliamentary Debates, London Chronicle, Mirror of Parliament, Morning Chronicle, The Times and Votes and Proceedings of Parliament). Tilly (1995, p. 63) defines "popular protest" as an event where "10 or more people gather in a publicly accessible place and make claims on other people, including holders of power, claims which if realized would affect the interests of their object". Each event is characterized by a date and location (usually, the parish or town), an estimate of the number of people involved, who was making the claim, and to whom the claim was directed. We combine three types of peaceful protest to proxy for peaceful local activism (*Peaceful activism*): (i) meetings, which involved organized events where a group of individuals congregated with prior notice; (ii) gatherings, which were more spontaneous and included street protests and demonstrations that remained peaceful; and (iii) delegations. We use the events that involved violence to proxy for violent local activism (*Violent activism*). The two aggregate up to Total activism. For each of these, we record the number of events and the approximate number of people involved (if no estimate is given, we assume that at least 10 people were involved). We attribute the measures to constituencies before and after the reform as follows:

- **Time period:** We use data from 1828 and 1829 to measure pre-reform local activism and 1833 and 1834 to measure post-reform local activism. We exclude events in the reform years (1830-32) and aggregate the pre- and post-data across the two respective years.
- Geo-location of the events. The data Horn and Tilly (1988) made public show only the county in which each event took place. The original database, however,

also recorded the town or parish of the event, and we used this information to geo-reference each event.⁵⁶

- The size of each constituency. The Boundary Committee collected information on the boundaries of the pre-1832 constituencies. Many of these constituencies were enlarged and the borders of the new constituencies had to be redrawn. This task fell on the Boundary Committee. The committee reported the area, before and after the reform, of each borough constituency (UK Parliamentary Paper, 1831-32, XXXVI.479 (493)). Based on this information, we calculated the radius of a circle with the same pre- or post-area as each constituency. We call this the base radius.
- Allocating local activism to constituencies. For each constituency, we drew a circle centered at the constituency's centroid. The radius of the circle was X times the base radius. We allocated all events that happened within that circle to the constituency. We use X=1 and X=2. If an event was within the circle for several constituencies, it was allocated to all of them.

Figure A2 shows a times series plot of the annual number of petitions sent from the 255 borough constituencies in our sample, as well as the annual number of petitions from all places in Great Britain. Figure A3 shows the number of petitions sent by different sender types before and after the reform. Figure A4 shows the change in the number of voters before and after the reform for the constituencies that had uninterrupted representation. Figure A5 reports annual information on the share of the total number of petitions in our sample for which we can identify the sender.

⁵⁶ Takeshi Wada converted Charles Tilly's 11 datasets into a master Microsoft Access database in 2002. Chris Tilly kindly helped us obtain this database.

	Obs	Constituencies	Mean	Std	Min	Max
Petitions						
All petitions	510	255	3.47	5.36	0	60
Civic	254	127	1.62	1.06	1	10
Business	205	103^{a}	1.90	1.79	1	20
Religious	244	122	1.76	1.00	1	6
Local	149	75^a	1.19	0.54	1	6
$\mathbf{Protests}^b$						
People (violent)	484	242	187	$1,\!492$	0	$20,\!451$
People (Peaceful)	484	242	5,902	33,807	0	376,237
Event (violent)	484	242	1.05	6.24	0	67
Events (peaceful)	484	242	8.91	49.98	0	581
Other variables						
$Patronage^{c}$	240	120	0.46	0.50	0	1
$\Delta \text{voters} (\mathbf{V})$	510	255	395	$1,\!450$	-4,424	10,309
Population	510	255	19,116	40,736	98	377,869

 Table A1:
 Summary statistics

Notes: For Petitions and Population, the sample is all borough constituencies, excluding the city of London (255), before and after the Reform Act (without data from 1830-32). ^aData are missing either before or after the Reform Bill for one constituency. ^bThe data for public protest are not available for Wales, so the sample is the English borough constituencies only. ^cFor *Patronage*, the sample is the pre-1832 borough constituencies on the Drummond list (120).

Constituency	Status	Total	In Sample
Pre-1832 boroughs ^{a}		214	213
	In Drummond list	120	120
	Schedule A: lost all seats	56	56
	Schedule B: kept 1 seat	30	30
	Other: kept all seats	34	34
	Not in Drummond list: not at $risk^b$	128	127^{a}
New post-1832 boroughs ^{c}		42	42
	Schedule C: gained 2 seats	22	22
	Schedule D: gained 1 seat	20	20

Table A2: Overview over the English and Welsh borough constituencies in our sample.

Notes: The schedules refer to the Appendix of the Reform Bill (UK Parliamentary Paper 1831-32 Bills and Acts 277, 3 III.111). The Drummond list refers to the list of constituencies at risk of losing representation (UK Parliamentary Papers, 1831-32, House of Commons Papers, XXXVI.185 (44)). ^aThe City of London is excluded from our sample. ^bFour of the surviving borough constituencies had one seat before the reform and kept that seat, while the rest kept their two seats. Weymouth and Melcombe Regis are included as one constituency before and after the reform. ^cSwansea is not included in the sample. Before the reform, part of Swansea contributed to Cardiff District. After the reform, Swansea was grouped together with Aberavon, Kenfigg, Loughor and Neath, which also contributed to Cardiff District and were moved into a new Swansea District. Swansea was, therefore, not a 'new' district in the sense that the constituent parts had not be represented before, but it was not a surviving district either because it did not exist as a separate entity before the reform.



Notes: This map shows the borders of the three (borough) constituencies of Colchester, Harwich and Maldon (in red) in the county of Essex (in green) before the Reform Act. Each of these three constituencies returned two MPs. According to Philbin (1965), in 1831 there were 1,084 voters in Colchester, 3,113 in Maldon but only 20 in Harwich.

Figure A1: Parliamentary boroughs in Essex under the Unreformed Parliament.

B Additional results



Notes: The data on all petitions are from UK Parliamentary Papers 1852.

Figure A2: Petitions from the borough constituencies in our sample compared to petitions from all locations, by year.



Notes: The figure shows the distribution of petitions by type of sender, before and after the Great Reform Act (for the 255 constituencies in our sample). The six categories are: religious = churches, bishops, priories, clergy, etc.; citizens (civil society) = inhabitants of..., named person of..., householders of..., electors of..., burgess of... etc.; societies = organizations such as Working men's society of.., literacy and philosophy society of.., Old men's club, etc.; local government = mayor, corporation, union, magistrate, aldermen, parish council, etc.; business = merchants of... attorneys, trustees, banks, subscribers, chairman of business meeting committee, journeymen, trade groups, surgeons, etc.; transport: trusts, organizations or companies related to trains, turnpikes, roads and canals. The sources are discussed in the text.

Figure A3: Petitions presented to the House of Commons, by sender type, before and after the reform.



Notes: The difference between the number of voters pre-reform as reported by local officials and the number of registered voters post-reform. The sample is the borough constituencies in England and Wales that kept at least one of their seats. (Negative numbers indicate a reduction in the number of voters.) Source: See Appendix A.

Figure A4: The absolute change in the number of voters between 1831 and 1832 for the English and Welsh borough constituencies that existed before and after the reform



Figure A5: The share of petitions for which we can identify the sender.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Outcome	Ĺ	og peopl	le		Events		Log p	people	Éve	ents
	All	Violent	Peace	All	Violent	Peace	All	Peace	All	Peace
R	0.11	0.030	0.11	2.33	0.016	2.32	-0.83**	-0.79**	-0.39*	-0.36*
	(0.59)	(0.40)	(0.57)	(3.52)	(0.48)	(3.10)	(0.24)	(0.24)	(0.16)	(0.16)
Р	0.67^{*}	-0.11	0.76^{*}	2.54	0.012	2.53	0.11	0.059	0.36	0.33
	(0.32)	(0.20)	(0.31)	(1.81)	(0.31)	(1.57)	(0.31)	(0.31)	(0.23)	(0.23)
$\mathbf{R} \times \mathbf{P}$	1.00^{+}	0.40	0.94^{+}	4.24	0.84	3.40	-0.26	-0.21	-0.48^+	-0.45^{+}
	(0.56)	(0.44)	(0.54)	(3.57)	(0.60)	(3.04)	(0.35)	(0.35)	(0.26)	(0.26)
Const.	122	122	122	122	122	122	120	120	120	120
Obs.	244	244	244	244	244	244	240	240	240	240
R^2	0.034	0.006	0.036	0.015	0.009	0.016	0.103	0.091	0.076	0.068
Scale	1	1	1	1	1	1	2	2	2	2
Case	G	G	G	G	G	G	L	L	\mathbf{L}	L

 Table A3: Difference-in-differences estimates with Tilly public protests as the outcome variable

Notes: ** p < 0.01, * p < 0.05, + p < 0.1. The table reports standard errors in parentheses. The table reports estimates of a version of equation (1) where the outcome variable is either all, violent, or peaceful protest, measured by either the (log of) the number of people involved or by the number of events. The ATE estimates are shown in Figure 5 except for the ones in columns (5) and (8). Case G: the treatment group is the new constituencies that gained representation for the first time and the control group is the pre-1832 constituencies that kept their seats and were not on the Drummond list. Case L: the treatment group is constituencies that lost all seats and the control group is constituencies at risk of losing representation (i.e., on the Drummond list) that kept at least one seat. Data from 1830-32 excluded. See Appendix A for information on how the protest data were constructed. In Case G, it is possible to estimate the effect of violent unrest and we report results for all, violent, and peaceful incidents separately. For case L, there are only five constituencies that were exposed to violent unrest and this is not enough to estimate coefficients for this type of incident. To allocate incidents to constituencies we computed the radius of the circle with an area twice that of the constituency (for case L) and events within that radius of a constituency's centroid were allocated to the constituency. In this case scale = 2, which makes sense because these constituencies often were a small subset of a larger parish and not geographically distinct. For case G, we use the radius of a circle with the same area as the constituency. In this case scale 1, which makes sense because there constituencies were large and all the new constituencies in the treatment group had their border purposely drawn.

	(1)	(4)	(5)	(2)
(3)				
		Log (peti	tions+1)	
R	-0.15	-0.15	-0.43**	-0.45**
	(0.097)	(0.10)	(0.046)	(0.047)
Р	0.63^{**}	0.67^{**}	0.52^{**}	0.52^{**}
	(0.039)	(0.039)	(0.033)	(0.035)
$\mathbf{R} \times \mathbf{P} (\beta_3)$	0.30**	0.35**	-0.27**	-0.27**
	(0.088)	(0.078)	(0.051)	(0.053)
Log people (all)	0.069**	· · ·	0.037^{*}	. ,
,	(0.015)		(0.019)	
Events (all)	· · · ·	0.0045^{*}		0.027
		(0.0022)		(0.025)
Constituencies	122^a	122^a	120	120
Observations	244	244	240	240
R^2	0.396	0.324	0.579	0.572
Scale	1	1	2	2
Case	G	G	L	L

Table A4: Controlling for Tilly's measures of public protest

Notes: ** p<0.01, * p<0.05, + p<0.1. Clustered standard errors in parentheses. Constant not shown. The table reports the estimated β_3 from a version of equation (1) that is augmented with controls for the Tilly protests measured either as the log of the number of people involved *Log people (all)* or the number of events *Events (all)*. See the notes to Table 3 for a description of cases L and G. Data from 1830-32 are excluded. To allocate incidents to constituencies we computed the radius of the circle with an area that was twice that of the constituency (scale = 2). Events within that radius of a constituency's centroid were allocated to that constituency. We also estimated results where the radius used to allocate incidents was instead that of a circle with an area equal to that of the constituency (scale = 1). We allowed protests to be allocated to more than one constituency. See Appendix A for information on how the protest data were constructed. ^aPublic protest data are not available for the 13 Welsh borough constituencies.

	(2)	(1)	(4)	(3)	(6)	(5)
]	Log (petition	ns+1)		Peti	tions
R	0.012	-0.49**	0.026	-0.51^{**}	-0.50	-0.81**
	(0.11)	(0.048)	(0.11)	(0.049)	(0.44)	(0.092)
Р	0.58^{**}	0.48^{**}	0.53^{**}	0.44^{**}	4.34^{**}	1.50^{**}
	(0.032)	(0.035)	(0.031)	(0.034)	(0.49)	(0.12)
$\mathbf{R} \times \mathbf{P} \left(\beta_3 \right)$	0.31**	-0.26**	0.29**	-0.24**	3.21*	-1.04**
	(0.068)	(0.052)	(0.066)	(0.052)	(1.38)	(0.15)
Constituencies	135	120	135	120	135	120
Observations	270	240	270	240	270	240
R^2	0.220	0.558	0.199	0.549	0.179	0.525
Case	G	\mathbf{L}	G	L	G	L
1830-32 petitions	non-reform	non-reform	all	all	none	none

Table A5: Difference-in-differences estimates including petitions sent in 1830-32; differ-
ent specification of the outcome variable

Notes: ** p<0.01, * p<0.05, ⁺ p<0.1. Clustered standard errors in parentheses. Constant not reported. The table reports the estimate of β_3 from equation (1) for different samples and for different outcome variables. In columns (1) and (2), the baseline sample is extended to include all non-reform related petitions sent in 1830-32. In columns (3) and (4), the baseline sample is extended with all petitions from 1830-32 (included in the pre-treatment period). The outcome variable is log(petitions+1) in all four columns. In columns (5) and (6), the outcome variable is the absolute number of petitions (rather than the log transformation). See the notes to Table 3 for a description of cases G and L.

	(2)	(1)	(5)	(6)	(3)	(4)	
	Log (petitions+1)						
R	-0.080	-0.46**	-0.49**	-0.52**	-0.29**	-0.29**	
	(0.10)	(0.047)	(0.11)	(0.12)	(0.061)	(0.066)	
Р	0.58^{**}	0.52^{**}	0.51^{**}	0.49^{**}	0.46^{**}	0.46^{**}	
	(0.043)	(0.051)	(0.047)	(0.049)	(0.040)	(0.047)	
$\mathbf{R} \times \mathbf{P} \left(\beta_3 \right)$	0.36^{**}	-0.19**	0.41^{**}	0.45^{**}	-0.22**	-0.22**	
	(0.075)	(0.072)	(0.077)	(0.088)	(0.058)	(0.060)	
Log Population			0.40^{**}	1.30	0.15^{**}	0.18	
			(0.063)	(0.80)	(0.031)	(0.25)	
Log Population squared				-0.045		-0.0019	
				(0.041)		(0.018)	
Constituencies	135	120	135	135	120	120	
Observations	270	240	270	270	240	240	
R^2	0.235	0.472	0.497	0.505	0.598	0.598	
Case	G	L	G	G	L	L	
Post period	1833-34	1833-34	1833-38	1833-38	1833-38	1833-38	

Table A6: Difference-in-differences estimates: Post-treatment period restricted to 1833and 1834; controls for population.

Notes: ** p<0.01, * p<0.05, + p<0.1. Clustered standard errors in parentheses. Constant not reported. The table reports the estimate of β_3 from equation (1) for different samples and for different outcome variables. In columns (1) and (2), the post-treatment period is restricted to 1833-34. In columns (3) to (6), we control for population size in different ways. See the notes to Table 3 for a description of cases G and L. Data from 1830-32 excluded in all specifications.

	(1)	(2)	
	Log (petitions+1)		
R	-0.42**	-0.44**	
	(0.12)	(0.050)	
Р	0.74**	0.52**	
	(0.049)	(0.033)	
$\mathbf{R} \times \mathbf{P} \left(\beta_3 \right)$	0.30**	-0.28**	
	(0.083)	(0.051)	
Constituencies	89	120	
Observations	178	220	
R^2	0.353	0.558	
Case	G1	L1	

 Table A7: Difference-in-differences estimates: alternative definitions of treatment and control.

Notes: ** p<0.01, * p<0.05, + p<0.1. Clustered standard errors in parentheses. Constant not reported. The table reports the estimate of β_3 from equation (1) for alternative specifications of the control groups. Case G1: the treatment group is the 42 constituencies that gained representation; the control group is the constituencies that were not at risk of losing representation (and kept there seats) that had more than 10,000 inhabitants in 1831. Case L1: the treatment group is the constituencies that lost both seats (schedule A) and the control group is constituencies that lost one seat (schedule B) plus constituencies which were originally included in either schedule A or B, but were subsequently moved out of that schedule. Data from 1830 and 1832 are excluded.

	(1)	(2)	(3)	(4)
	civil society	business	religious	local
R	-0.12+	-0.031	-0.040	-0.065*
	(0.060)	(0.089)	(0.086)	(0.027)
Р	0.10^{*}	0.052	0.047	0.10
	(0.050)	(0.051)	(0.064)	(0.075)
$\mathbf{R} \times \mathbf{P} (\beta_3)$	0.21^{*}	0.23^{*}	-0.067	0.10
	(0.089)	(0.10)	(0.095)	(0.17)
Constant	0.93^{**}	1.00^{**}	1.03^{**}	0.76^{**}
	(0.042)	(0.066)	(0.045)	(0.027)
Constituencies	71	66	125	26
Observations	142	132	150	52
R^2	0.100	0.062	0.014	0.056
Case	G	G	G	G

Table A8: Difference-in-differences estimates by type of sender (case G)

Notes: *** p < 0.01, * p < 0.05, + p < 0.1. The outcome is log(petitions+1) but restricted to the type of petitions indicated in the column headings. Clustered standard errors in parentheses. Constant not shown. The data for 1830-32 are excluded. The table reports the estimate of β_3 from equation (1) for case G for different types of petition senders. In column (1), the dependent variable is petitions sent by civil society (including petitions sent by inhabitants of..., named person of..., householders of..., electors of..., burgess of... etc. or from organizations such as Working men's society of.., literacy and philosophy society of.., Old men's club, etc.). In column (2), the dependent variable is petitions sent by business groups (including petitions sent by merchants of... attorneys, trustees, banks, subscribers, chairman of business meeting committee, journeymen, trade groups, surgeons, etc. or trusts, organizations or companies related to trains, turnpikes, roads and canals). In column (3), the dependent variable is petitions sent by religious groups (including from churches, bishops, priories, clergy, etc.). In column (4), it is petitions sent by local government bodies (including from mayors, corporations, unions, magistrates, aldermen, parish councils, etc.). The estimations only use information on constituencies that sent at least one petition in each category, both before and after the reform. Case G is defined in the note to Table 3 and in the text. The estimates of β_3 are shown graphically in Figure 6.